

In the specification:

Before paragraph [0001], please add the following Title and heading:

CONCENTRIC PAINT ATOMIZER SHAPING AIR RINGS

FIELD OF THE INVENTION

Please replace paragraph [0001] with:

[0001] The invention pertains to a method for controlling the width of the spray jet of an atomizer and to an atomizer, for the series coating of workpieces, which comprises outlet openings for producing a gas current that bounds the atomizing cone ~~according to the preambles of the independent claims.~~

Between paragraphs [0001] and [0002], please add the following heading:

BACKGROUND OF THE INVENTION

Between paragraphs [0008] and [0009], please add the following heading:

SUMMARY OF INVENTION

Between paragraphs [0013] and [0014], please add the following heading:

BRIEF DESCRIPTION OF THE DRAWINGS

Please replace paragraph [0014] with:

[0014] ~~The invention is described in greater detail below with reference to the embodiment that is illustrated in the figures. The figures show:~~ Other advantages of the present invention will be readily appreciated as the same becomes better understood by reference to the following Detailed Description when considered in connection with the accompanying drawings.

Between paragraphs [0017] and [0018], please add the following heading:

DETAILED DESCRIPTION OF THE INVENTION

Please replace paragraph [0018] with:

[0018] With the exception of the described steering air control of the spray jet, the electrostatic rotary atomizer shown in Figure 1 can correspond to the prior art, e.g., the above-
Attorney Reference No: 60,126-214 2
Application Serial No.: 60/442,497 (pre-conversion)

mentioned DE 4306800. A steering air ring 4 is conventionally arranged coaxial to the atomizer axis 3 on the end face of the atomizer housing 2 that faces the bell dish 1. The holes 12, 13 for the steering air that serve to adjust the width of the spray jet and are described below end in the radially extending end face 5 of the steering air ring 4 that faces the bell dish 1 and consequently the atomizing cone formed by the sprayed coating material. The peripheral surface 7 of the annular body of the steering air ring 4 conically widens downward as shown in the figure, and is aligned flush with the adjacent peripheral surface 8 of the housing 2. Air turbulence around the atomizer is prevented due to the uninterrupted and smooth outer contour of the entire atomizer periphery, wherein undesired influence of the spraying process on the bell dish 1 as well as contamination of the atomizer housing are prevented.

Please replace paragraph [0019] with:

[0019] The end face 5 of the steering air ring 4 can be situated axially behind the bell dish 1 as in the embodiment shown, wherein this end face can extend radially inward into the vicinity of the hollow shaft of the air turbine that drives the bell dish 1. The steering air ring 4 could also be completely inserted into the open end face of the atomizer housing 2. In another embodiment, the steering air ring 4 with its arrangement of the outlet openings projects axially forward over the bell dish 1.

Please replace paragraph [0021] with:

[0021] In the embodiment shown, the holes 12 and 13 are respectively arranged in the end face 5 in an axially parallel fashion. However, it is possible to realize other arrangements. The radially inner holes 13 are supplied by an annular channel 14 within the steering air ring 4 which is connected to a (not-shown) compressed air line of the atomizer. The outer holes 12 of the steering air ring 4 first run axially from the end face 5 and then, as shown in the figure, with rear part 16 run approximately parallel to the peripheral surface 7 radiating out to annular channel 17. The latter annular channel 17 is, after installing the steering air ring 4, formed between the rear side of the steering air ring 4 and the adjacent parts of the atomizer, wherein this annular channel 17 is supplied by another compressed air line of the atomizer.

Please replace paragraph [0024] with:

[0024] When coating workpieces, e.g., car bodies, the first controlled steering air emerging from the radially inner holes 13 is preferably used for adjusting wide spray jets (for example, SB 50% of 250-300 mm) for the exterior coating process. In this case, the second steering air, which is controlled separately from the first steering air and emerges from the holes

12 in the larger graduated circle 10, is used for adjusting narrower spray jets (for example, SB 50% of 50-300 mm) for detail and interior coating processes, wherein it may be practical for both regions to overlap (as in the described example). This means that the width of the spray jet can be adjusted within the entire range required for the exterior, interior and detail coating processes (50-550 mm in the described example) with one and the same atomizer, without having to interrupt the coating process and without having to accept significant disadvantages. The two steering air currents can be used and controlled independently of one another, i.e., one steering air can be switched off while the atomizer operates with the other steering air. The first steering air that emerges from the inner holes 13 behind the bell dish 1 impacts the conically downward tapered peripheral surface of the bell dish 1 relatively far toward the rear, wherein an air cushion is generated around the bell dish 1 and a uniform air distribution is advantageously achieved during atomization. The second steering air emerging from the outer holes 12 can, by contrast, be directed a slight radial distance (on the order, for instance, of 1 mm) outside the spraying edge of the bell dish 1 such that it impacts the coating material that needs to be or already is partially atomized by rotation. This causes a more intense constriction of the spray jet than that of the steering air emerging from the inner holes 13, such that the efficiency is maximized and small workpiece regions or workpiece regions that are difficult to access can also be adequately coated.

Please add the following new paragraphs after paragraph [0024]:

[0024a] The invention has been described in an illustrative manner, and it is to be understood that the terminology which has been used is intended to be in the nature of words of description rather than limitation.

[0024b] Obviously, many modifications and variations of the present invention are possible in light of the above teachings it is, therefore, to be understood that within the scope of the appended claims, wherein reference numerals are merely for convenience and not to be in any way limiting, the invention may be practiced otherwise than as specifically described.